

(19)

Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11)

**EP 1 149 719 A3**

(12)

**EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
30.07.2003 Bulletin 2003/31

(51) Int Cl.7: **B60J 5/04**

(43) Date of publication A2:  
31.10.2001 Bulletin 2001/44

(21) Application number: 01303671.0

(22) Date of filing: 20.04.2001

(84) Designated Contracting States:  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE TR  
Designated Extension States:  
AL LT LV MK RO SI

- Chuang, Ching-Hung  
Northville, Michigan 48167 (US)
- Machin, Ronald  
Ann Arbor, Michigan 48105 (US)
- Crane, Scott  
Farmington Hills, Michigan 48335 (US)
- Wu, Xiao  
Canton, Michigan 48188 (US)

(30) Priority: 26.04.2000 US 558776

(71) Applicant: Ford Global Technologies, Inc.  
Dearborn, Michigan 48126 (US)

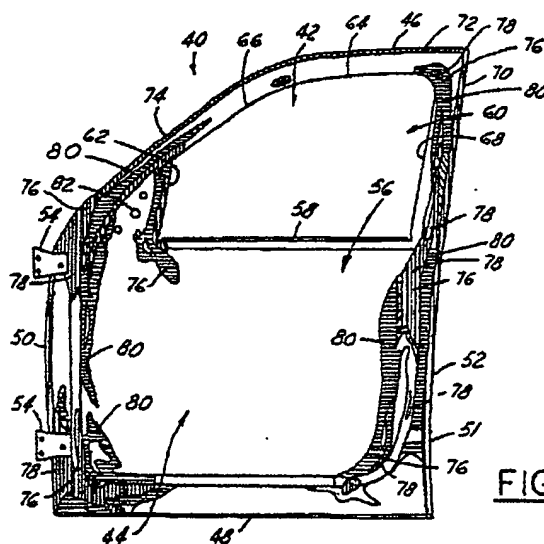
(74) Representative: Messulam, Alec Moses et al  
A. Messulam & Co. Ltd.,  
43-45 High Road  
Bushey Heath, Bushey, Herts WD23 1EE (GB)

(72) Inventors:  
• Ourchane, Amar  
Dearborn, Michigan 48124 (US)

(54) **Method and apparatus for forming a three piece tailor welded door blank**

(57) A three-piece tailor welded blank vehicle door structure (40) includes a periphery (46) defined by a bottom portion (48), a pair of opposing side portions (50,52), a top portion (52), and an inclined portion (66). A first thickness gage sheet material portion (90) is disposed generally along the door hinge side of the door

structure (40). A second thicker gage sheet material portion (94) is disposed generally along the door latch side of the door structure (40). A thinner gage sheet material portion (92) is disposed between the first and second thickness gage sheet material portions (90,94), whereby the overall weight of the vehicle door is reduced.

**FIG.2****EP 1 149 719 A3**



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 01 30 3671

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	DE 195 34 127 A (VOLKSWAGENWERK AG) 28 March 1996 (1996-03-28) * column 1, line 19 - column 2, line 30; figure 1 *	1-10	B60J5/04
X	EP 0 803 389 A (BAYERISCHE MOTOREN WERKE AG ; YMOS AG IND PRODUKTE (DE)) 29 October 1997 (1997-10-29) * column 1, line 58 - column 3, line 36; figures 1,2 *	1,3-10	
A	US 5 735 081 A (SHIMIZU TAKUJI ET AL) 7 April 1998 (1998-04-07) * abstract; figure 1 *	1	
A	WO 00 00320 A (AUTOMATED WELDING SYSTEMS INC ; XIAO MIN (CA)) 6 January 2000 (2000-01-06) * page 1, paragraph 2 * * page 41, paragraph 2 - paragraph 4; figures 1,54 *	1	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B60J
Place of search		Date of completion of the search	Examiner
MUNICH		3 June 2003	Schmid, K
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

EPD FORM 1503 (03.02) (P/ACD)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 30 3671

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

03-06-2003

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 19534127	A	28-03-1996	DE 19534127 A1	28-03-1996
EP 0803389	A	29-10-1997	DE 19616788 A1	06-11-1997
			DE 59705434 D1	03-01-2002
			EP 0803389 A2	29-10-1997
US 5735081	A	07-04-1998	JP 7329572 A	19-12-1995
			DE 19517756 A1	14-12-1995
WO 0000320	A	06-01-2000	AU 4595099 A	17-01-2000
			BR 9912504 A	02-05-2001
			CA 2335546 A1	06-01-2000
			WO 0000320 A1	06-01-2000
			CN 1307510 T	08-08-2001
			EP 1109647 A1	27-06-2001
			GB 2354196 A	21-03-2001

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82